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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,047	04/26/2001	Yasuo Fukuda	Q64291	6518

7590

10/21/2003

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EXAMINER

PHAN, THIEM D

ART UNIT

PAPER NUMBER

3729

DATE MAILED: 10/21/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Interview Summary</b>	Application No.	Applicant(s)	
	09/842,047	FUKUDA ET AL.	
	Examiner	Art Unit	
	Tim Phan	3729	

All participants (applicant, applicant's representative, PTO personnel):

- (1) Thiem D. Phan. (3) Carl J. Arbes.  
 (2) Kevin M. Barner. (4) \_\_\_\_\_.

Date of Interview: 17 October 2003.

Type: a) ☒ Telephonic b) ☐ Video Conference  
 c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.  
 If Yes, brief description: \_\_\_\_\_.

Claim(s) discussed: Of record.

Identification of prior art discussed: Okino et al (US 4,952,272).

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: See Continuation Sheet.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

TP

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Carl J. Arbes  
 Examiner's signature, if required

Continuation Sheet:

On Friday, October 17th 2003 the Examiner and Mr. Kevin Barner engaged in a 15 minute phone interview to make up for the missed phone interview scheduled on October 16th 2003 at 9AM where Mr. Kevin failed to keep.

There are three outstanding issues: the proposed amendment filed on or about August 21st 2003 (Paper No. 10) was not entered because it raises new issues, e. g. the sharp pointed bump and the bevel-gear as star-shaped, that were not presented in the Claims before the Amendment (After Final Rejection).

The Office's position is provided in PTO Paper No.11. Applicants were informed that they can file a RCE, CPA, Notice of Appeal or abandon the Application.

Furthermore the Office saith not.



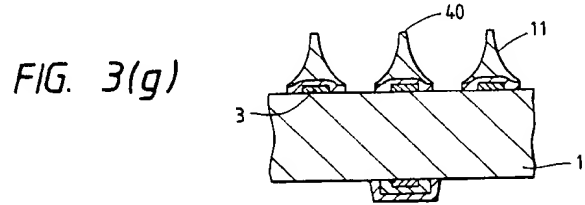
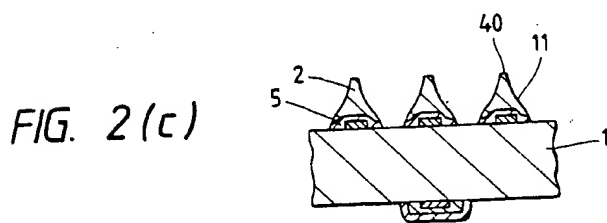
CARL J. ARBES  
PRIMARY EXAMINER



**AGENDA FOR INTERVIEW TO BE CONDUCTED ON THUR. OCT. 16,  
2003 AT 9 A.M.**

**09/842,047**

- In the Advisory Action dated September 5, 2003, the Examiner contends that Applicants fail to understand the express language of the asserted prior art reference, Okino et al. In particular, the Examiner asserts that that the probe pin disclosed in Okino is formed into a “sharp point” and that the method used to form this sharp point is “essentially the same” as the method used to form the claimed device. Applicant disagrees as follows.
  - As clearly shown in figures 2(c) and 3(g), the distal end of the probe pin in Okino is flat, not pointed.



This is further evidenced by the attendant description in Okino. For example, at col. 5, line 26, it is disclosed that the probe pin is formed with a “fine *flat* surface 40” and at col. 5, line 35, it is disclosed that “acute probe pin 11 [has] a fine *flat* surface 40 at the tip”.

- It is clear that the technique disclosed in Okino requires that the distal end of the probe be flat, not pointed or sharp. In particular, in Okino it is an objective that the probe pins have a uniform height. To achieve this objective the etching is stopped before the surface of the distal end of the pin is dissolved by the etch. Accordingly, pins having the same height, i.e., equal to the original film thickness, are achieved and each pin has a flat surface, not a “sharp pointed end”, as recited in the claims.
- The end of the recited pins are sharp and pointed because the distal end of the pins is stuck into the contact point of the object. With this operation the contamination

Limitation in  
claim  
8 of  
'272  
(col. 14, line 1)

coating film such as an oxide can be penetrated, thereby suppressing the contact resistance to a lower level. Additionally, contaminants attached to the pointed distal end of the pin are scraped off when the pin is stuck into the contact point. If the distal end were flat, like in Okino, such contaminants would not be scraped off and would remain within the contact point.

- The expression "beveled gear" is intended to illustrate the shape of the bump portion that is inevitably created since the mask of the present invention is not isolated. It is not intended to form a bump portion with the "beveled gear" shape but to indicate the use of a manufacturing method in which the mask is not isolated. Applicant's representative offers the phrase "star-shaped cross section" as an alternative for "beveled gear". This shape can be appreciated by reviewing, for example, figures 1(b) and 4 where the shape of probe pin 7a can be seen.
- It should be noted that it is was not originally intended, necessarily, to claim the shape of the probe pin. However, it is an objective to claim the use of a non-isolated mask, e.g., that does not come separated and suspended during etching, which can cause significant problems, such as clogging, etc.

Why

Fig.

9B  
element 64  
of Applicant's  
specification